MINERAL EXPLORATION FOCUS SHIFTS TO BASE ME[illegible]IN NEWFOUNDLAND AND LABRADOR

BY

NORM MERCER

JIM HINCHEY

NEWFOUNDLAND DEPARTMENT OF MINES & ENERGY

INTRODUCTION

Levels of exploration activity for the province during 1991 are down considerably from levels attained over the last few years. All the major exploration indicators - claims staked, claims in good standing, diamond drilling and exploration expenditures reflect this decrease in activity. The total value of mineral exploration for 1991 is estimated to be $13 million dollars representing a 70% decrease from the record setting $41 million expended in 1988.

Major exploration efforts are now mainly base metal directed, followed by gold with a small but increasing effort towards industrial minerals. Exploration programs are now being orchestrated and carried out by the major companies with very limited exploration being conducted by the junior exploration company sector.

SOUTHWEST NEWFOUNDLAND

Exploration activity in the southwest portion of Newfoundland dropped substantially during 1991 with just 3 to 4 companies active in the area.

Dolphin Explorations Ltd., carried out a limited soil geochemical and prospecting program on selected geochemical targets on its Cape Ray gold properties located approximately 20 kms east of Port aux Basques.

Placer Dome optioned the Isle aux Morts River gold property from Fortune Bay Resources and funded a $200,000 exploration program during 1991. Located approximately 8 kms north of Dolphin's main Cape Ray project, exploration carried out to date has included a variety of ground surveys including trenching and drilling. Some of the better drill results released to date include: 7.7 metres grading 9.6 g/t Au and 7.3 metres grading 6.2 g/t

Au. The mineralization occurs in a vertically dipping zone, varies from 10.7 to 12.2 metres wide (true) and consists primarily of quartz mineralization with varying amounts of pyrite, chalcopyrite, galena and lesser amounts of other sulphides.

Rio Algom Explorations Inc. conducted a deep diamond drilling program over the Isle aux Morts base metal prospects in 1991. This property is located just southwest of Dolphin's Cape Ray gold deposit. Semi-massive to massive mineralization over narrow widths grading up to 10-20% combined Pb-Zn, 0.2-1% Cu and 1.02 and 34.2 g/t Ag have been reported from previous exploration programs.

On May 24, 1991, Hope Brook Gold Inc. suspended its production operations at its gold mine located approximately 50 km east of Port aux Basques. During 1990, the mine produced 3,468 kg of gold from ore grading 4.6 g/t Au. In mid December 1991 Royal Oak Mines Inc. announced its intent to purchase all assets of Hope Brook Gold Inc. The acquisition is subject to regulatory approval and the mine is scheduled to be reopened in mid 1992.

Other companies who maintained claims in good standing in this area during 1991, some with exploration programs included Inco Gold, Bay Roberts Resources, Teck Exploration Ltd., Long Range Resources and Eastern Goldfields Ltd.

GREAT NORTHERN PENINSULA - WESTERN NEWFOUNDLAND

Exploration on the Great Northern Peninsula - Western Newfoundland portion of the province increased slightly in 1991.

Westminer Canada Ltd. staked 126 claims on the Port au Port Peninsula and 220 claims in the Flat Bay area, as part of an overall large scale evaluation/compilation of the

west coast for its base metal potential.

Late 1990 - early 1991, Teck Exploration Ltd. staked a total of 422 claims in several areas stretching from Stephenville to the tip of the Great Northern Peninsula. These claims were staked as part of Teck's ongoing evaluation of the west coast for mineralization akin to their now closed Daniel's Harbour carbonate hosted zinc mine. Approximately 830,000 tonnes of zinc concentrate was produced over the 15 year life of this mine.

On the east side of Port au Port Bay just northwest of Stephenville, International Corona in joint venture with Canchrome, continued evaluating sea bottom sediments for its chromite placer potential. A vibracore drilling program was carried out in 1991.

Newfoundland Resources and Mining Company Limited operate a limestone aggregate crushing and processing facility at Lower Cove, Port au Port Peninsula. This material is used for concrete and paving stone. Just north-northeast of its present operation, Newfoundland Resources developed a high purity limestone deposit in 1991. This product can be applied in non-aggregate uses such as flue gas desulphurization.

Also on the Port au Port Peninsula Aguathuna Mining Inc., plan to reopen the old Aguathuna limestone - dolomite quarry. Aguathuna have the right to acquire a 20 year renewable mining lease on this property. In addition, prospecting and geological mapping, was carried out on a block of 30 claims held by Zeraldo Minerals in the immediate area.

Acadia Minerals Ventures Ltd. carried out a limited diamond drill program on its Stewart Pb-Zn option located near Roddickton. The holes were designed to test several soil geochemical anomalies. Results remain confidential.

Northeast of Roddickton, Aurion Minerals Limited continued with its evaluation of its Coles Pond high purity marble deposit. Work included ongoing geological studies

together with marketing and feasibility studies.

Len Pye (prospector) is continuing to test the potential for a marble operation on his Goose Arm property located near the community of Deer Lake. Work carried out during 1991 included geological mapping, stripping, some diamond drilling and ongoing marketing and feasibility studies.

Newfoundland Goldbar, as operator in joint venture with Varna Gold Inc., continued to evaluate their Glover Island property located south of Corner Brook. Exploration work consisting of prospecting, detailed mapping, trenching and diamond drilling has identified a number of sites with visible gold hosted by pervasively pyrite mineralized, highly silicified felsite sheets and quartz-albite veins along a seven kilometre zone.

Some of the better results released to date include 10.58 g/t Au over 3.58 metres from trenching, 6.51 g/t Au over 14.11 metres from drill hole KPS-2, 4.29 g/t Au over 10.1 meters from KPS-4 and 3.43 g/t Au over 3.81 meters from KPS-5. This drilling has defined a mineralized zone with a minimum strike of 91.4m, a dip of 65 to 75° with an apparent width of 19.8 to 22.9 meters.

Results from several other diamond drill holes on two other zones located on the property are expected to be released shortly. On August 1, 1991 Varna Gold Inc. announced that Newfoundland Goldbar acquired approximately 4.5 million shares or 18% of Varna.

To the immediate east of Newfoundland Goldbar's property in the Squaw Lake area, a total of 499 claims were staked in the fall of 1991 in a similar geological environment by H. Coates and K. Blackshaw.

Noranda Exploration Company, Limited staked an additional 62 claims around their

three massive sulphide projects in the Bay of Islands area. These include the York Harbour, Chimney Cove and Steep Brook projects. Work carried out in 1990 and 1991 included linecutting, geochemistry, geophysics and some diamond drilling. These results remain confidential. However, previous drill indicated reserves on the York Harbour property stand at 199,540 tonnes grading 2.63% Cu and 8.25% Zn.

BAIE VERTE PENINSULA

In June 1986, Noranda Exploration Company, Limited prospectors discovered the Deer Cove gold prospect. This sparked a staking rush and subsequent intense exploration efforts over the entire Baie Verte Peninsula. As a result, a number of gold deposits i.e. Deer Cove, Pine Cove, Nugget Pond, Stog'er Tight and numerous prospects were discovered. Mineral exploration activity has dropped considerably since 1986 and much of the land acquired during the initial staking rush has been dropped and is now open for staking.

Very little exploration work was carried out in the Pine Cove area during 1991. International Corona is the operator of this project and had the right to earn a 70% interest in the property by meeting option payment requirements and delivering a bankable feasibility study to Varna Gold Inc. by November 9, 1991. Corona has outlined an undiluted geological reserve of 2.14 million tonnes grading 3.01 g/t Au representing approximately 200,000 ounces of gold which may be amenable to open pit exploitation. This reserve is contained in the Thunder and Lighting zones.

On November 7, 1991, NovaGold Resources Inc. announced it had signed an agreement with International Corona to purchase Corona's interest in the Pine Cove property. The purchase is subject to NovaGold carrying out a feasibility study by December

3, 1991 and to regulatory approval. The closing of the purchase is scheduled to take place on January 17, 1992. The feasibility study will determine whether the Pine Cove ores are amenable to vat leaching techniques which NovaGold is using at its Murray Brook gold mine in New Brunswick.

In addition to the Thunder and Lighting zones, there are several other significant gold mineralized zones on the property such as Romeo, Juliet and Anoroc. Significant gold assays have been reported from trenching and diamond drilling programs on these prospects to date.

To the southeast of the Pine Cove property International Impala Resources Limited and joint venture partner and operator Noranda carried out a limited exploration program in early 1991 near Mings Bight. Drill indicated reserves on the Stog'er Tight showings stand at 453,592 tonnes grading 5.8 g/t Au. The mineralization consisting of bright pink (hematite-stained) strongly albitized gabbro with up to 10% coarse grained pyrite has been traced over a length of 915 metres, to a depth of 244 metres and remains open at depth. The zone appears to have been cut off to the east.

Bitech Corporation is currently seeking additional financing to carry out further development on its Nugget Pond and Bett's Cove properties. Estimated mineable reserves at Nugget Pond stand at 514,000 tonnes averaging 14.13 g/t Au while at Bett's Cove geologically inferred reserves stand at 132,000 tonnes grading 6.8 g/t Au tonne. The mineralization at Nugget Pond is stratabound and concentrated in a dark-green to black pyritic argillite horizon within the Bett's Cove ophiolite complex with the highest gold grades associated with very coarse euhedral pyrite.

Newfoundland Exploration Company Limited announced in early October that it

reached an agreement in principle with International Corona to acquire the mill and auxiliary buildings located at the Rambler Property just east of Baie Verte. Consideration will consist of cash and treasury shares subject to regulatory approvals.

On February 4, 1991 Baie Verte Mines Inc. announced permanent closure of its dry operations. Asbestos is now being recovered from mine tailings through a wet milling process operated by Teranov Mining Corp. This process technology provides a low cost environmentally sound extraction technique for asbestos production.

Buchans - Red Indian Lake

This area was the most actively explored portion of the province in 1991. The area contains the former high grade Buchans base/precious metal mine and a number of other significant base metal deposits.

BP Resources Canada Limited conducted a variety of geotechnical surveys including diamond drilling on their Valentine Lake gold and Buchans base/precious metal properties. Mineralization at Valentine is found in quartz-tourmaline veins located at a faulted contact between sediments and a trondhjemite intrusion. The overall minimum exploration target at Valentine is a 5-10 million tonne deposit amenable to underground mining grading greater than 6 g/t Au. The Buchans property covers the Buchans mine area which produced 16.2 million tonnes of ore between 1928 and 1984 with an average head grade of 14.5% Zn, 1.4% Cu, 7.6% Pb, 126 g/t Ag and 1.37 g/t Au. Reinterpretation of the stratigraphy in this area has identified a number of new exploration targets. BP also explored the Victoria Mine, Jacks Pond, Daniels Pond, Reid Lot 228 and Great Burnt Lake areas.

BP's recent corporate decision to divest itself of all its Canadian mineral assets has

resulted in renewed interest in the Buchans - Red Indian Lake area. This interest is not confined specifically to BP's large land holdings (AND Charter Lands) but includes interest in outlying areas. For example, Noranda has recently staked approximately 1000 claims north of and in the immediate Buchans area.

The Noranda - BP joint venture (60-40) carried out limited drilling and ongoing environmental - feasibility studies on and in the area of its Duck Pond base metal deposit in 1991. Current published reserves stand at 4.3 million tonnes grading 3.58% Cu, 1.05% Pb, 6.73% Zn, 68.31 g/t Ag and 1.0 g/t Au. Work on the remaining Noranda claims in the Noel Paul's Brook area consisted of a variety of ground surveys with some diamond drilling.

Rio Algom hold title to some 400 claims surrounding the former Gullbridge Cu mine situated north of Buchans. Exploration to date, including diamond drilling, has defined an extensive alteration package. The Gullbridge mine produced a total of 3 million tonnes averaging 1.1% Cu between 1967 and 1972. A deep diamond drill program is planned for 1992.

Other companies with claims in the general area, some with 1991 programs, included Inco (drilling), Granges (drilling), Falconbridge, Corona, Tolisco, Vinland, Cominco, AVIP and Rainbow Resources.

Gander - Baie D'Espoir

Noranda, together with their joint venture partners, continued to evaluate several areas stretching from Gander Bay in the north to Little Gull River in the south. These include the Duder Lake gold, the Beaver Brook antimony, the Mt. Peyton gold and the Glenwood gold properties. Additional drilling is planned on the Beaver Lake antimony

property in 1992.

Falconbridge conducted exploration programs including diamond drilling on its base metal properties at Seal Bay and Gander. The Seal Bay property, located west of Botwood, lies north of Noranda's Pt. Leamington deposit where reserves stand at 13.8 million tonnes grading 0.48% Cu, 1.92% Zn, 18.1 g/t Ag and 0.9 g/t Au.

In the immediate Gander - Glenwood area diamond drilling together with some additional ground surveys were carried out by Manor Resources and Gander River Minerals on their respective properties. Values as high as 168 g/t Au have been reported by Gander River Minerals.

At the Winter Hill base metal property, located near Hermitage Bay, Noranda conducted a limited geophysical and diamond drill program. This drilling sparked some staking activity with 151 claims acquired by Vinland Resources. To the west in the St. Alban's area Teck Exploration maintain approximately 900 claims covering several gold prospects. To the north of Teck's holdings, Noranda carried out limited drilling on their Huxter Pond and Burnt Pond base metal properties.

In addition the following maintained claims in good standing throughout 1991; Tillicum, Corona, Giant Meguma, Homestake Canada, Lundrigan Consulting, Norwest Minerals, Cuvier, White Plains, Battle Mountain, Rio Algom, Newfoundland Gold Corp. as well as several individual prospects. These claims cover both base and precious metal prospects.

Avalon - Burin Peninsula

Cominco Ltd. is the biggest player on the Avalon Peninsula with several base metal

targets staked for a total of 618 claims. Geological mapping, prospecting, geochemistry and some geophysical surveys have been carried out on most of these properties.

Vinland Resources holds title to 267 claims near Holyrood, located approximately 30 km's west of St. John's. Till geochemical surveys has revealed numerous visible gold grains (ie visible in 500 out of 620 samples taken) while grabs from silicified boulders assay up to 36 g/t Au.

Geological mapping carried out by J. Tuach Geological Consultants Inc. on the Lower Cambrian Slate Belt on Random Island around Hickman's Harbour indicates that the area contains in excess of 350 million tonnes capable of producing slate products. This deposit has been correlated with the Lower Cambrian slate deposits in Wales which purports to produce the best quality roofing slate available.

Very little exploration was carried on the remainder of the Avalon and Burin Peninsulas. However, some of the more prospective geological areas remain staked, primarily for gold ie International Corona at Hickey's Pond and Tolisco at Tug Pond. In addition several new areas were staked in 1991; J. Kennedy, Witless Bay base metals; P. Saunder, Foxtrap gold and Noranda, Bellevue base metals.

Labrador

There was a moderate increase in grassroots exploration activity in the central and northern portions of Labrador in 1991.

Noranda holds title to some 1,700 claims in the central and western portions on both base and precious metal targets occurring mainly in Proterozic clastic sedimentary environments.

Falconbridge staked approximately 1,500 claims in late 1990 early 1991 covering base metal prospects in several areas stretching from central to northern Labrador. Work conducted to date includes geological mapping, prospecting and geophysical surveys.

Cominco carried out a vibracore drill program on its 195 claim Porcupine Strand property located in eastern Labrador. The property covers placer heavy minerals (Fe-Ti) in modern beach sands.

In addition, Acadia Mineral Ventures continued evaluating the Strange Lake rare metal deposit located west of Nain; Mart Mining completed a small drill program on its Mart Lake graphite prospect located near Labrador City; The Labrador Inuit Development Corporation entered into an agreement with an Italian firm, to begin production on its anorthosite dimension stone deposit near Nain; Hollinger North Shore continued evaluating some of its Fe-Mn prospects in western Labrador and; I.O.C.'s Lelia Wynne dolomite mine began production.

Summary

Mineral exploration activity in Newfoundland and Labrador during 1991 continued on its downward trend. Forecasts for 1992 indicates that this trend will continue. The majority of exploration work carried out in 1991 was base metal directed and orchestrated and carried out by the major mining exploration sector. Only limited exploration was carried out by junior exploration companies. The moderate increase in grassroots exploration in the Labrador portion of the province during 1991 is considered positive.

HIGHLIGHTS OF EXPLORATION PROJECTS IN 1991

COMMODITY TONNAGE/GRADE

	Commodity	Tonnage/Grade	Comments
CENTRAL NFLD/ BUCHANS AREA			
Tally Pond (Noranda-BP)	Cu,Pb,Zn Ag, Au	4,300,000 @ 3.5% Cu 1.05% Pb, 6.73% Zn 68.31 g/mt Ag, 1.0 g/mt Au	Drilling
Boundary (Noranda)	Cu, Zn, Ag	500,000 @3.5% Cu 4.0% Zn, 3.4 g/mt Ag	
Daniels Pond (BP Resources)	Cu, Pb, Zn Ag, Au	NA	Drill Highlights include 5.5 m @ 18.8% Zn, 1.12% Cu, 10.9% Pb and 399.5 g/mt Ag
Valentine Lake (BP Resources)	Au	NA	Drill Highlights include 23.1m @ 4.6g/mt Au
Gullbridge (Rio Algom)	Cu	NA	Drilling; Mine operated from 1967 to 1972
BAIE VERTE/ SPRINGDALE PEN.			
Nugget Pond (Bitech)	Au	513,744 @ 14.13 g/mt Au	
Stog'er Tight (Noranda-Impala)	Au	453,952 @ 5.82 g/mt Au	Limited drilling
Pine Cove (Varna-Corona)	Au	2,140,000 @ 3.01g/mt Au	Novagold purchased Corona's interest in property
Hammer Down (Noranda)	Au	363,000 @ 15.0 g/mt Au or 403,000 @ 12.5 g/mt Au with a 20% dilution factor.	Limited drilling
GANDER AREA			
Point Leamington (Noranda)	Cu	13,800,000 @ 0.48% Cu 1.92% Zn, 18.1 g/mt Ag 0.9 g/mt Au	
Duder Lake/ Peyton (Noranda)	Au	NA	Drill highlights Mt include 7.8 m @ 4.5 g/mt Au from Duder Lake and 4.6 m @ 6.2 g/mt Au from Mt Peyton

	Commodity	Tonnage/Grade	Comments
Beaver Brook (Noranda)	Sb	NA	Drill highlights include 3.2 m @ 7.74% Sb and 23m @ 4.20% Sb
Glenwood (Noranda)	Au	NA	Drill highlights include 6.46 m @ 38.6 g/mt Au and 2.6 m @ 19.5 g/mt Au
SOUTHWEST COAST/ WEST COAST			
Cape Ray (Dolphin)	Au	453,500 @ 10.1 g/mt Au	Geochemical surveys
Isle aux Morts (Fortune Bay)	Au	NA	Drilling and trenching
Isle aux Morts (Rio Algom)	Pb, Zn	NA	Drilling
Glover Island (Nfld Goldbar)	Au	NA	Drilling, some trenching
Port au Port Bay (Corona Corp.)	Chromite	NA	Vibracore Drilling, Placer potential
Port au Port Pen. (NFLD Resources)	Limestone	NA	Road const. and development of new quarry
Port au Port Pen. (Aguathuna Mining)	Limestone-Dolomite	NA	To produce 453,500 tonnes of product/year
LABRADOR			
Mart Lake (Mart Lake Mining)	Graphite	NA	Drilling
Porcupine Strand (Cominco)	Fe-Ti	NA	Vibracore Drilling, Placer Potential
Lelia Wynne	Dolomite		Production

Significant Deposits of Newfoundland